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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,194	09/29/2000	Gary D. Zimmerman	10001701-1	1444

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EXAMINER	
PHAM, THIERRY L	
ART UNIT	**PAPER NUMBER**
2624	

DATE MAILED: 12/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/675,194	ZIMMERMAN, GARY D.	
	Examiner	Art Unit	
	Thierry L Pham	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *amendment filed on 8/24/04*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

- This action is responsive to the following communication: an Amendment filed on 8/24/04.
- Claims 9-20 are in pending; Claims 1-8, 21-23 are withdrawn from consideration.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirst et al (U.S. 5930553), and in view of Fackler et al (U.S. 5729204).

Regarding claim 9, Hirst discloses a printer controller (printer controller 13, fig. 1) includes a first connector (wire connecting printer controller 13 with print engine 12, fig. 1) for coupling to a printer and a second connector (connector 15 connecting with host computer, fig. 1) for coupling to a source of data to be printed comprising:

- a random access memory (microcomputer 30 includes RAM device 31, fig. 3, col. 5, lines 38-52, in addition, memory 19 as shown in fig. 1 can also be incorporated into printer controller 13, col. 4, lines 45-67) for storing a non-resident printer (printer software, col. 5, lines 15-25) controller program;
- a processor (microcomputer 30, fig. 1) for executing computer program coupled to the random access memory; and
- dynamic loading program (printer controller 13 includes program for automatically detecting new/updated version of printer's software, col. 4, lines 45-67) for automatically (without human intervention, col. 2, lines 40-50) managing the download of the non-resident printer controller program to the random access memory;
- a print controller ready data interface (wire 15 for receiving print data from host computer, fig. 1) for receiving print controller ready data (PCRD) from the source;

• a print engine ready data interface (wire connecting from printer controller 13 to print engine 12 for proving processed print data to print engine) for providing print engine ready data (PERD) to the printer, wherein the printer controller receives the print controller ready data and based thereon generates print engine ready data.

However, Hirst fails to explicitly teach printer controller 13 is disposed in a cable and external of the printer.

Fackler, in the same field of endeavor for controller, teaches a cable contains/includes a controller (cable 18 contains plurality of controllers, fig. 2, abstract, cols. 5-6) and external of printer (cable 18 is external of various devices, fig. 1, col. 2, lines 10-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Hirst as per teachings of Fackler by incorporated the printer controller (integrated circuit) of Hirst onto a cable as in fig. 5 of Fackler because of a following reason: (•) to allow/provide users of having the portable capability of implementing the printer controller of Hirst with different printing devices; (•) updating/upgrading new printer program increasing the printer's operating efficiency and to improve output quality performance.

Therefore, it would have been obvious to combine Hirst with Fackler to obtain the invention as specified in claim 1.

Regarding claim 10, Hirst further discloses the printer controller of claim 9, wherein the dynamic loading program, when executing on the processor, selectively downloads (download new/updated version of printer controller program, fig. 5) from the source the non-resident printer controller program to the printer controller when it is determined that the current version of the printer controller resident in the random access memory is not valid (prior to download the new/updated version of printer controller program, the printer controller 13 must determine and test whether the stored programs are valid, fig. 5, col. 2, lines 32-55).

Regarding claim 11, Hirst further discloses the printer controller of claim 9, wherein the dynamic loading program, when executing on the processor, selectively downloads (download new/updated version of printer controller program, fig. 5) from the source the non-resident printer controller program to the printer controller when it is determined that the current version

of the printer controller program resident in the random access memory is one of the non-existent and corrupt (prior to download the new/updated version of printer controller program, the printer controller 13 must determine and test whether the stored programs are valid/existent, fig. 5, col. 2, lines 32-55).

Regarding claim 12, Hirst further discloses the printer controller of claim 10, wherein the printer controller program, when executing on the processor, receives print controller ready data and based thereon generates print engine ready data for controlling a print engine (printer controller 13 provides print engine ready data and transmits provided data to print engine, fig. 1, col. 4, lines 30-35).

Regarding claim 13, Hirst further discloses the printer controller of claim 9 further comprising: an integrity check module (printer controller including a micro-controller 30, fig. 1), when executing on the processor, for performing an integrity check on the printer controller program to determine whether the printer controller program is valid, re-installing the printer controller program from the source when the printer controller program is not valid (installing a new/updated version of printer controller program if the old printer controller program is incompatible and/or valid, fig. 5), performing compatibility tests to determine whether the printer controller program is compatible with the printer controller and a printing software, re-installing the printer controller program from the source when the printer controller program not compatible (prior to download and install the new/updated version of printer controller program, the printer controller 13 must determine and test whether the stored programs are valid/existent/compatible, fig. 5, col. 2, lines 32-55) with the printer controller and the printing software.

Regarding claims 14-15, Hirst further discloses the printer controller program of claim 9 wherein the printer controller is embodied in a single integrated circuit (printer controller 13, fig. 1).

3. Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirst et al (U.S. 5930553), and in view of Terashima et al (U.S. 6538762).

Regarding claim 16, Hirst discloses a method of printing in a system (printing system, fig. 1) that includes a printer (printer 10, fig. 1) having a print engine (print engine 12, fig. 1), a printer controller (controller 13, fig. 1) having a memory (printer controller 13 includes a microcomputer 30 includes RAM device 31, fig. 3, col. 5, lines 38-52, in addition, memory 19 as shown in fig. 1 can also be incorporated into printer controller 13, col. 4, lines 45-67) memory for storing a printer controller program, a host (host computer 20, fig. 1) having a printing software (printer driver 21, fig. 1), the method comprising the steps of:

- automatically (automatically determine whether the stored controller program is loaded, fig. 5, col. 2, lines 32-54) determining whether the printer controller program is loaded in the memory of the printer controller (prior to download and install the new/updated version of printer controller program, the printer controller 13 must determine and test whether the stored programs are valid/existent/compatible, fig. 5, col. 2, lines 32-55);
- automatically determining (automatically determine whether the stored controller program is valid, fig. 5, col. 2, lines 32-54) whether the printer controller program is valid (prior to download and install the new/updated version of printer controller program, the printer controller 13 must determine and test whether the stored programs are valid/existent/compatible, fig. 5, col. 2, lines 32-55);
- automatically (automatically determine whether the stored controller program is compatible, fig. 5, col. 2, lines 32-54) determining whether the printer controller program is compatible with the print engine, the printing software and printer controller (prior to download and install the new/updated version of printer controller program, the printer controller 13 must determine and test whether the stored programs are valid/existent/compatible, fig. 5, col. 2, lines 32-55);
- sending (cable 15 for sending print data from host computer to controller 13, fig. 1) data to be printed to the printer controller when the printer controller program is loaded, valid, and compatible.

However, Hirst fails to teach printer controller 13 is "external" of the printer 10. Terashima, in the same field of endeavor for print system, teaches a printer controller can be incorporated in the printer, host computer, or can be a standalone/external device (figs. 1-4).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Hirst as per teachings of Terashima because of a following reason: (•) updating/upgrading new printer program increasing the printer's operating efficiency and to improve output quality performance; (•) having an external printer controller provides users with capabilities of portability.

Therefore, it would have been obvious to combine Hirst with Terashima to obtain the invention as specified in claim 16.

Regarding claim 17, Hirst further discloses the method of claim 16 further comprising: (e) downloading the printer controller program to the printer controller when the printer controller program is one of not loaded, invalid, and incompatible (prior to download and install the new/updated version of printer controller program, the printer controller 13 must determine and test whether the stored programs are valid/existent/compatible, fig. 5, col. 2, lines 32-55).

Regarding claim 18, Hirst further discloses the method of claim 17 wherein the step of downloading the printer controller program to the printer controller further comprises: (e1) automatically downloading the printer controller program from the host to the printer controller (fig. 5).

Regarding claim 19, Hirst further discloses the method of claim 17 wherein the step of downloading the printer controller program to the printer controller further comprises: (e1) automatically downloading the printer controller program from a web site (internet website, fig. 5) to the printer controller.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirst and Terashima as described in claim 16 above, and further in view of Austin (U.S. 6665089).

The combinations of Hirst and Terashima as described in claim 16 above does not explicitly teach wherein the step of determining whether the printer controller program is valid further comprises: performing a cyclic redundancy check on the printer controller program.

Austin, in the same field of endeavor for printing, teaches the step of determining whether the printer controller program is valid further comprises: performing a cyclic redundancy check (Fig. 18, col. 12, lines 60-67 to col. 13, lines 1-30) on the printer controller program.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Hirst and Terashima as per teachings of Austin because of a following reason: (1) an additional method of testing (CRC checking method) increase the flexibility of testing the printer controller programs to provide an accurate results.

Therefore, it would have been obvious to combine Hirst and Terashima with Austin to obtain the invention as specified in claim 20.

Response to Arguments

Applicant's arguments with respect to claims 9-20 have been considered but are moot in view of the new ground(s) of rejection because of amendment filed by applicants.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- U.S. 6113208 to Benjamin et al, teaches a printing system for automatically downloading/upgrading new/updated version of printer controller program.
- U.S. 6438643 to Ohara et al, teaches a method for determining whether or not the stored printer program is valid, compatible.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

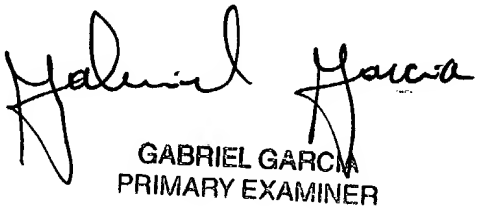
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thierry L Pham whose telephone number is (703) 305-1897. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on (703)308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thierry L. Pham



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PRIMARY EXAMINER